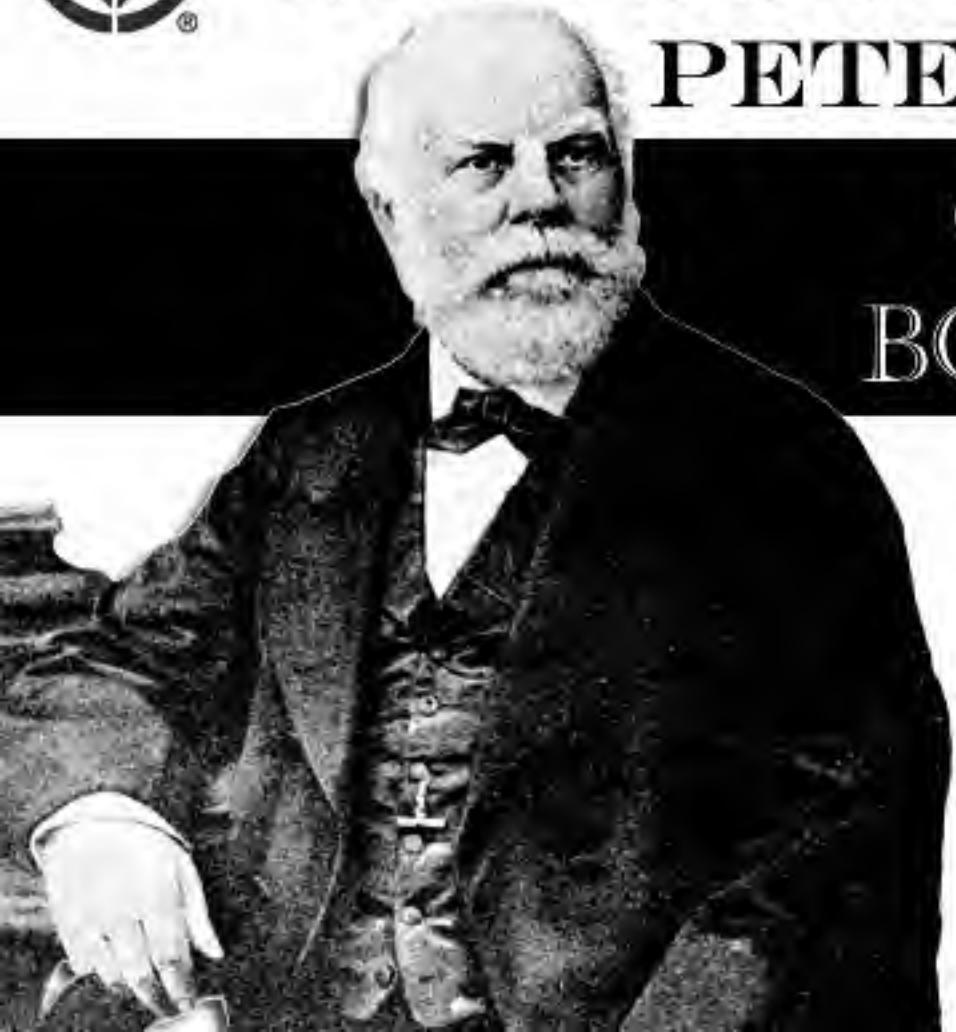




# MISSOURI BOTANICAL GARDEN

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## GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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Arizona

Febr 1868

D. Palmer. N. 82

(private number 95)

*Opuntia*

Same plant, with *Opuntia* 81 and *Cereus giganteus*  
Fl. May 11. -

joint before me flat, almost orbicular,  
8 inches long 7 wide in areoles  $1\frac{1}{2}$ , never 2  
inches apart, <sup>brown woolly, much bristly</sup> spines 3-5, flattened, off areoles,  
whitish, <sup>2</sup> & brown at base or all brown horn-colored,  
1-2 inches long

The flowers exactly like those of 81

berry  $1\frac{1}{2}$  inches long, clavate, narrow; with  
deep umbilicus 6 or 7 l. wide;

Seed over 2 l. long or over, looking much  
larger than that of 81, with a very wide I think  
rim.



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Arizona

Febr 1868

Dr Palmer No 81 Arizona  
(private number 93)

*Opuntia*

plant before me <sup>obcordate - obovate, flat</sup> 9 inches long,  $6\frac{1}{2}$  wide  
"plant tall, at Camp Grant, with 200 of ganters"

areoles distant about  $\frac{1}{2}$  inches, rather large  
prominent, with brown wool, bearing few (1-3)  
brownish spines, (flattened, larger ones)  $\frac{3}{4}$  - 1 inch  
long often short brown spines on the upper edge of  
areole. <sup>perhaps 2 $\frac{1}{2}$  inches - I don't</sup>

Flower yellow, tenui reddish in pedicel;  
fl. on May 11 - Ovary 1 $\frac{1}{2}$  in long, elongated clavate  
with over 20 areoles covered with brown wool and  
short bristles - rarely some longer ones.

sepals & petals each about 8; exterior deeply  
obcordate abruptly opposite, petals obcordate  
obovate - anthers linear, stigmas (green?) about 8.

Berry fleshy ovoid 1 $\frac{1}{2}$  - 1 $\frac{1}{4}$  inches long,  
smooth, with a wide (over  $\frac{3}{4}$  in) and  
shallow umbilicus <sup>each composed</sup> <sup>arrow but</sup>

seed pretty regular & small <sup>with a very</sup>  
thick rim, as thick as the seed, <sup>less than</sup> ~~only~~ 2 l. diameter



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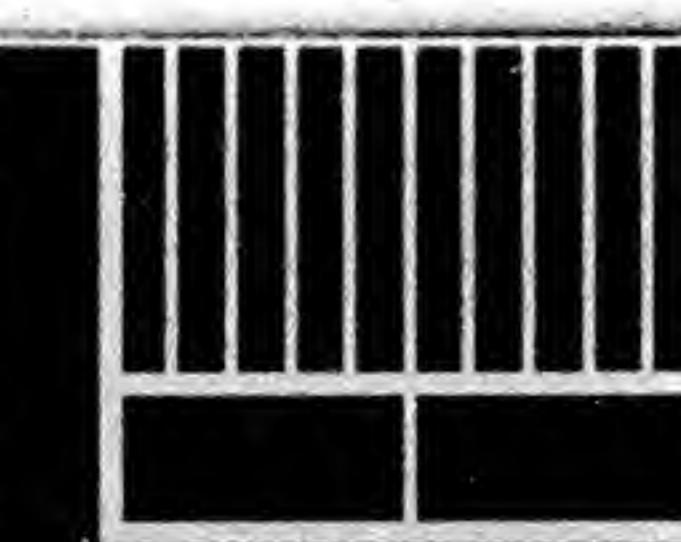
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*O. missouriensis* var.

June 23. 1873

~~*Opuntia rotula* Nutt. - For & Gr T p 555  
" spines strong & numerous on joints - fruit; fl. common red  
Colo. Rocky Mountains near the Colorado, 42° lat "~~  
(This would be above Fort Bridger, - Wyoming)

A living plant in flower & fruit was received today, which may be this (No.!) (especially the young)

Joint  $3\frac{3}{4}$  inches wide orbicular obovate, or  
transverse; pale or somewhat glaucous green  
Areoles 2 or 3 lines apart, all, even in young joint  
spinous, lower ones with shorter weaker (2-6 lobes)  
upper ones besides those with a few short ( $1-1\frac{1}{2}$  inches)  
spines white, shortest ones light brown below  
bristles yellow and short.

Leaves on young joints  $3-3\frac{1}{2}$  mm long  $\times 4$   
with white wool very few bristles and  
about 5 short spines in axil

Flowers beautiful and clear purple and with  
thin green stigmas strikingly resembling *Cercus* peacock  
which is just now in bloom with me. - Nothing of  
coppery or bronze, or resemble resembling one of yellow  
in the tinge.

Open flower with ovary 2 inches long or high.  
 $2\frac{3}{4}$  is exact diameter, ovary 13-14 lines long  
10-11 l. wide at top, turbinate-ovate, with 40-55 areoles  
and white spines which in fruit are reflexed

Stigma  $\frac{1}{2}$  l. 5-8 ovate areoles green; next  $\frac{1}{2}$  l. 6 or 8  
ovate areoles, red on margin; following  $\frac{1}{2}$  l. triangular  
obovate oblique with green midrib; sepals all  $\frac{1}{2}$  l. 15-16  
petals purple very strong, obtuse not emarginate,  
oblique, outer petals largest. 1 inch wide  $\frac{1}{3}$  l.



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plants 2 style deep purple  
9 stig. erect curved, forming a cornel head  
bright green ♀ 9 stig.

Ed. Crane sends it from Pueblo says  
it is there as common as the yellow form  
and there is also an orange flowered variety

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at & Weber's, Paris, Manh  
1869

Opuntia stenopetala Eng.

This plant is most common about Matehuala, but extends from Solis to Coahuila on Agoston northward it is almost always sterile; southward mostly fertile; the ovary and pistil of the northern plant is like that figured by me from Dr. Gregg's specimens.

Fruit ripe in October about Matehuala, of varlet colour, ovoid, 8 cent. m. long, 4. wide ( $1\frac{1}{2} \times \frac{3}{4}$  inch) at first tuberculated, afterward, when fully ripe plump and smooth (Weber notes) pulp rose purple

Seed small, very regular, rim thick and narrow.



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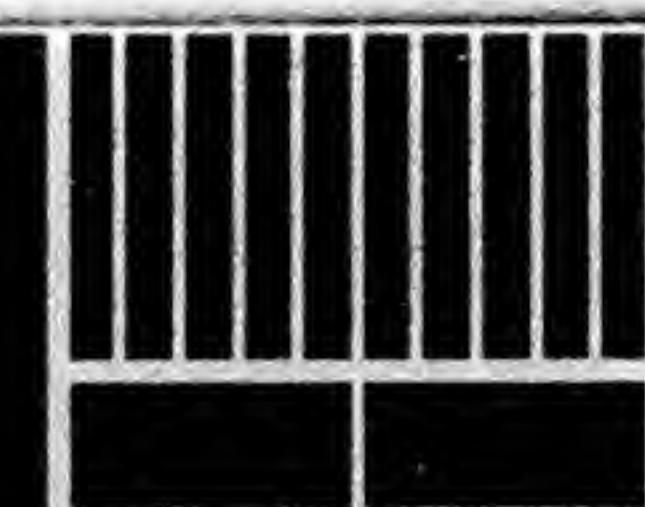
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Dec 1872

pyconantha

*Gentia* Maydewae Magdeline Bay  
Prof. L. Agassiz, Steamer Expedit. 1872

Erecta, arborescens, vato-ovato-oblanceolata, <sup>5" latis 5-6" longis</sup> Magdeline Bay ✓  
compressa, plana, vix lobulata, divisione concava plexigra  
flexuosa, intertexta, armata,  
areolata, <sup>oblongata</sup> intertexta, 1½ vittatis, 2-3 his, et diamet.  
valde approximata (3-4 his distantibus) tanum fulvo  
fulvo tenuissimis, <sup>omnibus</sup> longis, numerosis, strobilis, <sup>fundat</sup> generaliter  
cavulis pallide stramineis, ~~luteis~~ <sup>luteis</sup> intertextis, am-  
bitu arborescens, 3-5-7 pugnatis, pollens longis  
ramis flexuosis, in vittatis numerosis (ad 50  
plusibus que) longis, persistentibus



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O. Cylindrica?

Spec. 1870

<sup>No</sup>  
*Opuntia rutila* Nutt. Twp & Gr. Her. I. 555  
St. George, Utah ~~and~~ by J. E. Johnson  
August 1870

hamatus, glaucescens; articulis elongatis doratis  
(3-4 pulcherrimis 2 poll. latis); subaristatae  
areolae <sup>dentatae</sup> ~~approximatae~~ pubescentes, <sup>ombrae</sup> <sup>traversas</sup> setae leuiores  
pallides, aculeosque <sup>plures</sup> <sup>flexiles</sup> ~~alligatae~~ deflexos vel longioribus pallidioribus  
compositae, geruntur.

Roots remarkably fibrous; areolas quite close  
not more than 3-4 ~~and~~ ~~and~~ 2 in. apart; ~~articulatae~~  
younger ones a line in diameter, older ones larger,  
spines 12-16 ~~between~~ mostly 2 or 3 to 6 l. by ~~10~~  
larger ones 9-12 l. in. by, on the lower half, short  
bristles on the upper margin of the light brown woolly areole.

(*Opuntia rutila*, Nuttall in Twp & Gr. Her. I. 555.

" spines strong and numerous on joints and fruit; fl. carmine red;  
Rocky Mountains near the Colorado, alt. 42°.

[This would be about Fort Bridger in Wyoming.]



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2. O. vittata Nutt similar to O. Morrisonii, but with soft larger  
3. <sup>or</sup> ~~or~~ <sup>mostly</sup> ~~bracts~~ <sup>mostly</sup> ~~spars~~ <sup>close</sup> covered with closely set bunches of white  
mostly reflexed, ~~the~~ <sup>dry</sup> spine, large on flattened and stiff <sup>dry</sup> bracts;  
flowers rose red, may or ~~not~~ <sup>dry</sup> spring.

From Killarney to St George, and from St George to Killarney, a road  
covered with Nutalls flat, also found it covered with



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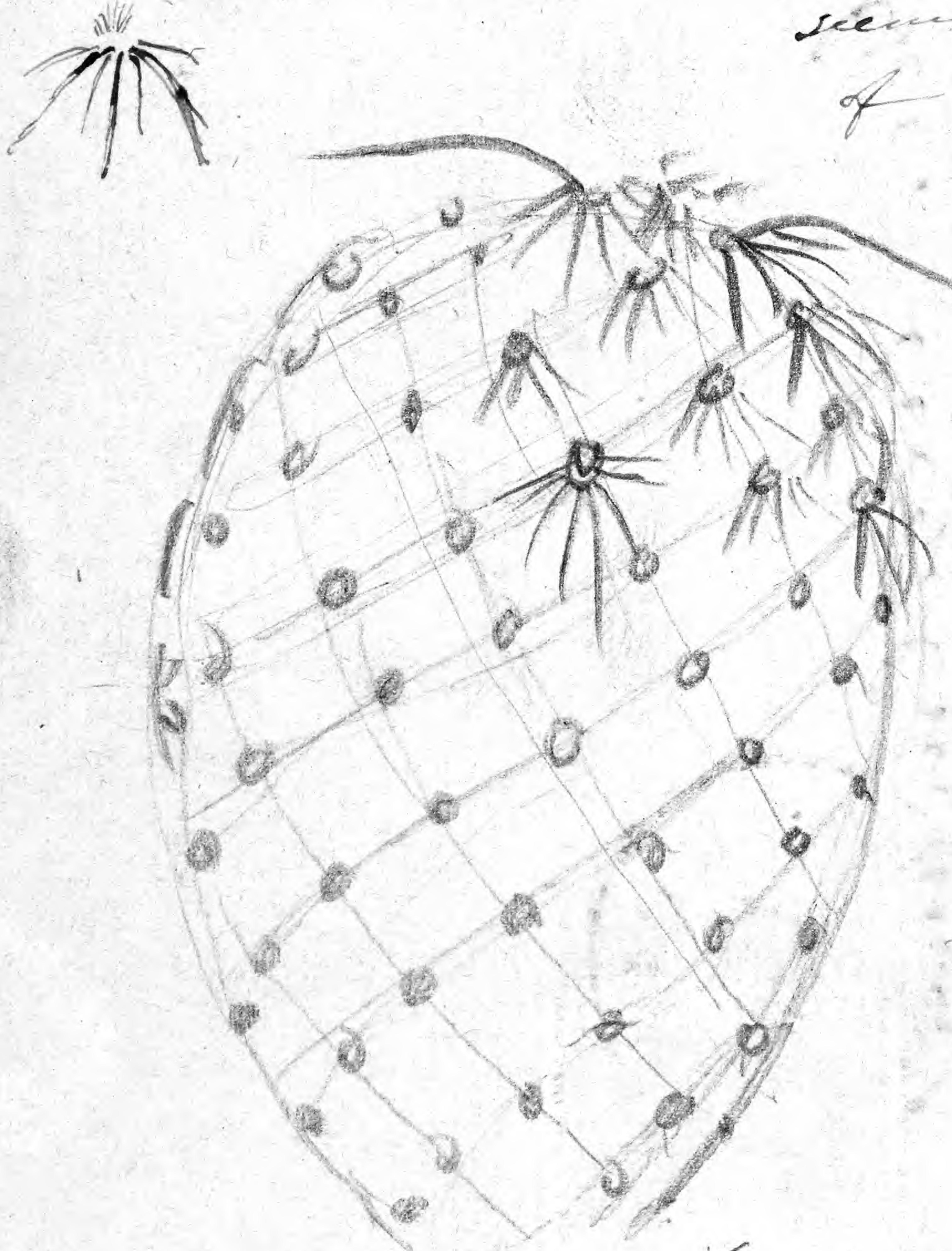
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*Opuntia* No 3

St George Utah Dr Palmer 1870



seems to be the same thing as 1 and 2  
of the same region, but 6-8 and 9 species  
are short 3-5 or something like this  
long, white, glistering; <sup>pet above</sup> deflexed  
rarely a brown spine on the upper margin  
areoles, longer and flexuous, tent,  
- bristles with long brownish scales.

Flowers red - with few or numerous  
spines on ovary; petals numerous (13)  
spatulate, 8 stamens, 8 stigmas - a head.  
Cochineil on this plant.



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Dr. Geo. Engelmann

St. Louis

Missouri

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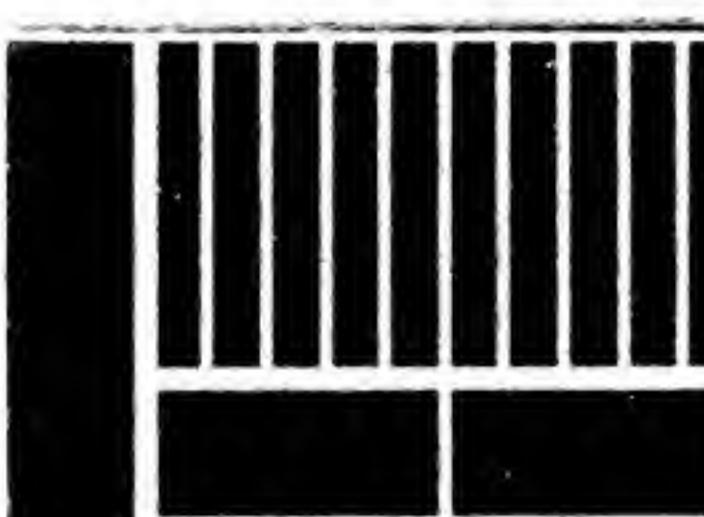
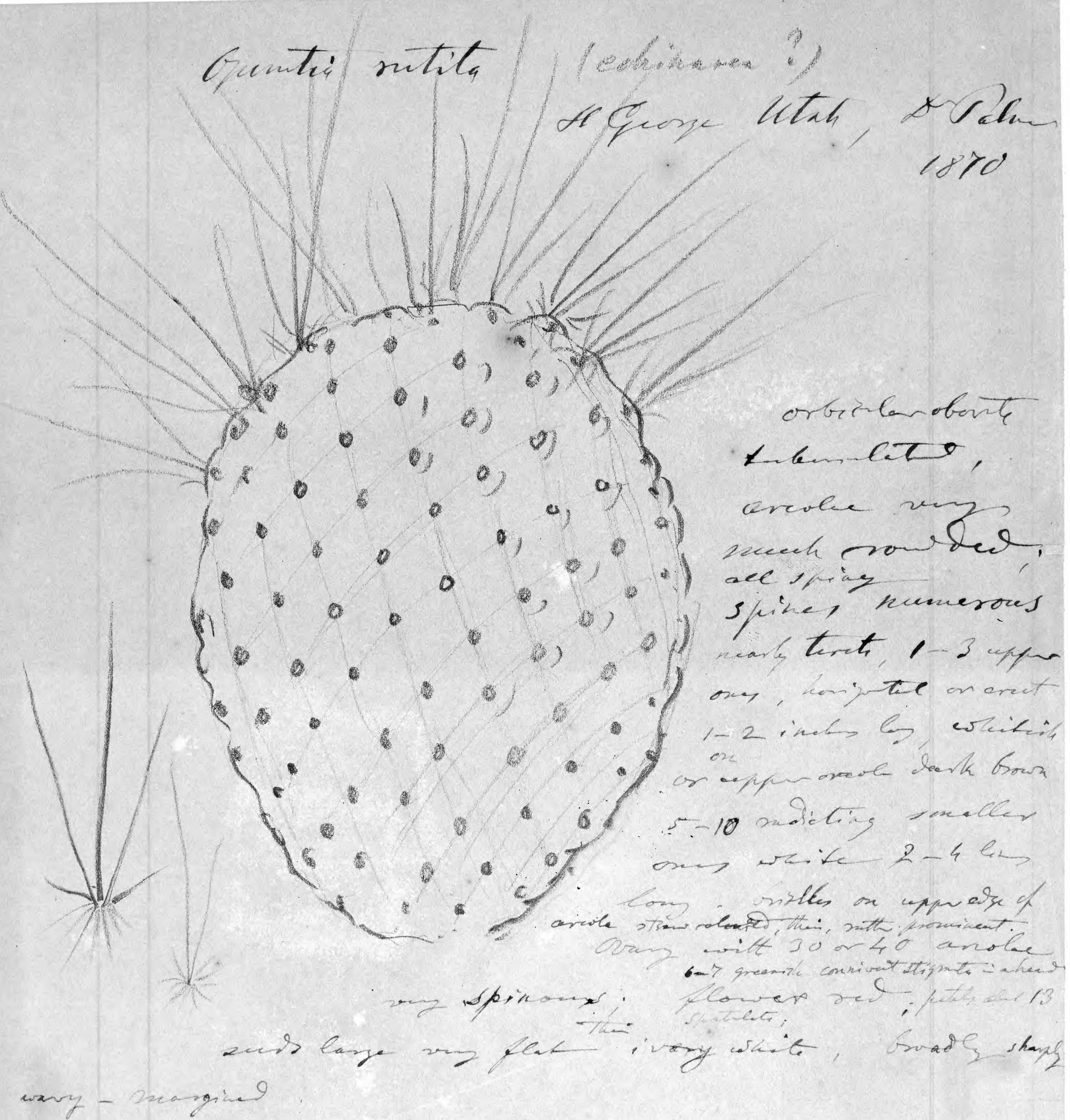
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*Gamia nitida* (Edgeworth?)

H. George Utah, & Palmer  
1870



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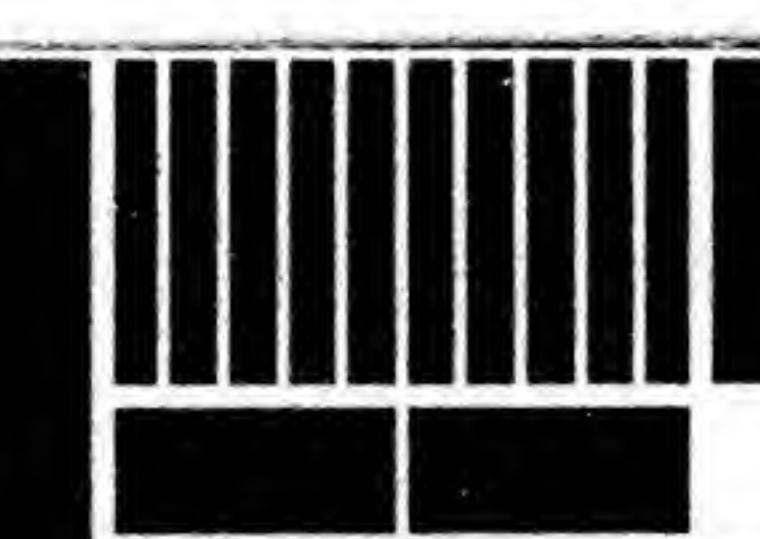
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Dec 5 By Cash 5 00

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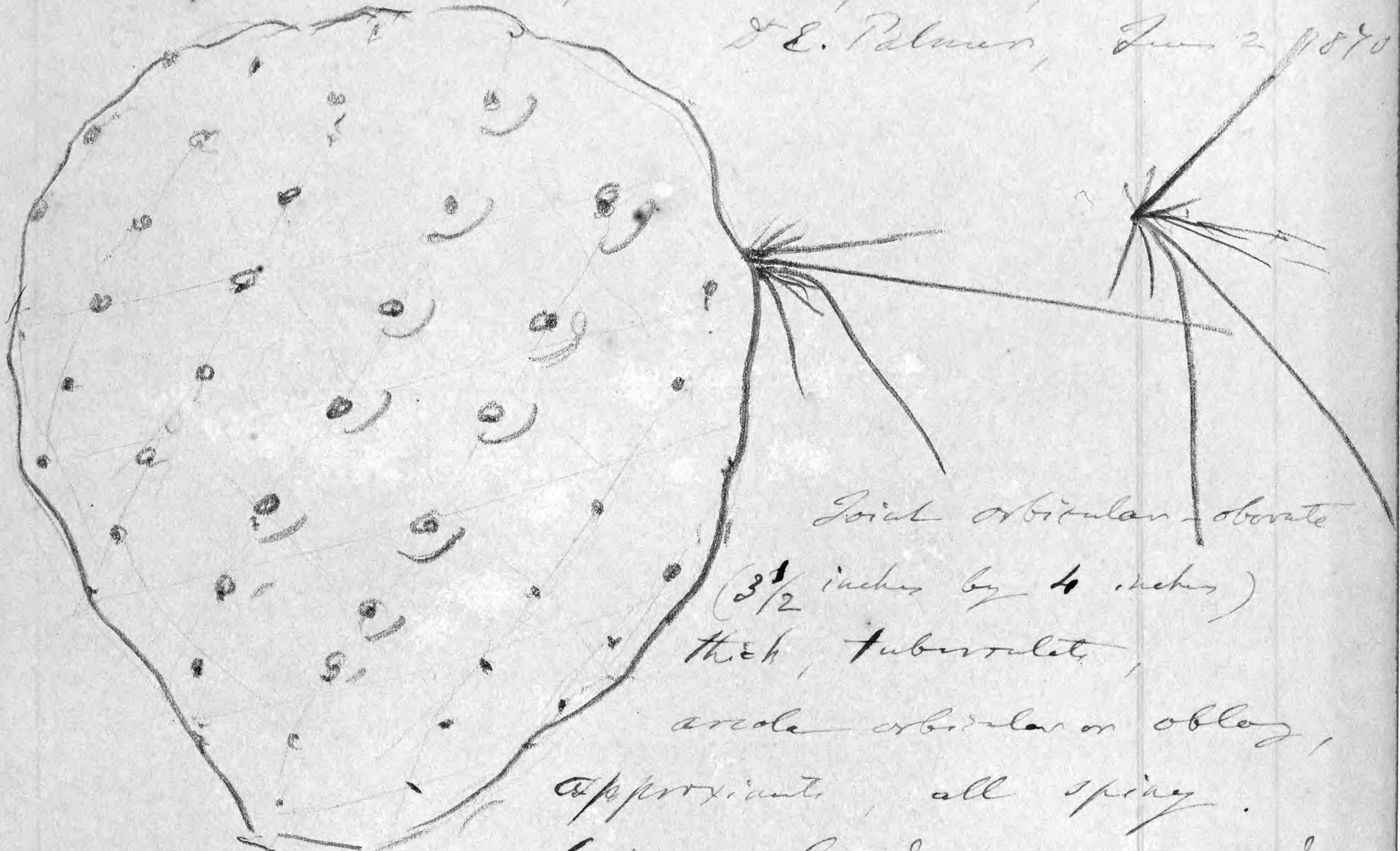


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Oreocactus

marked No 1 15 miles south of Fillmore, Utah

J. E. Palmer, June 2 1870

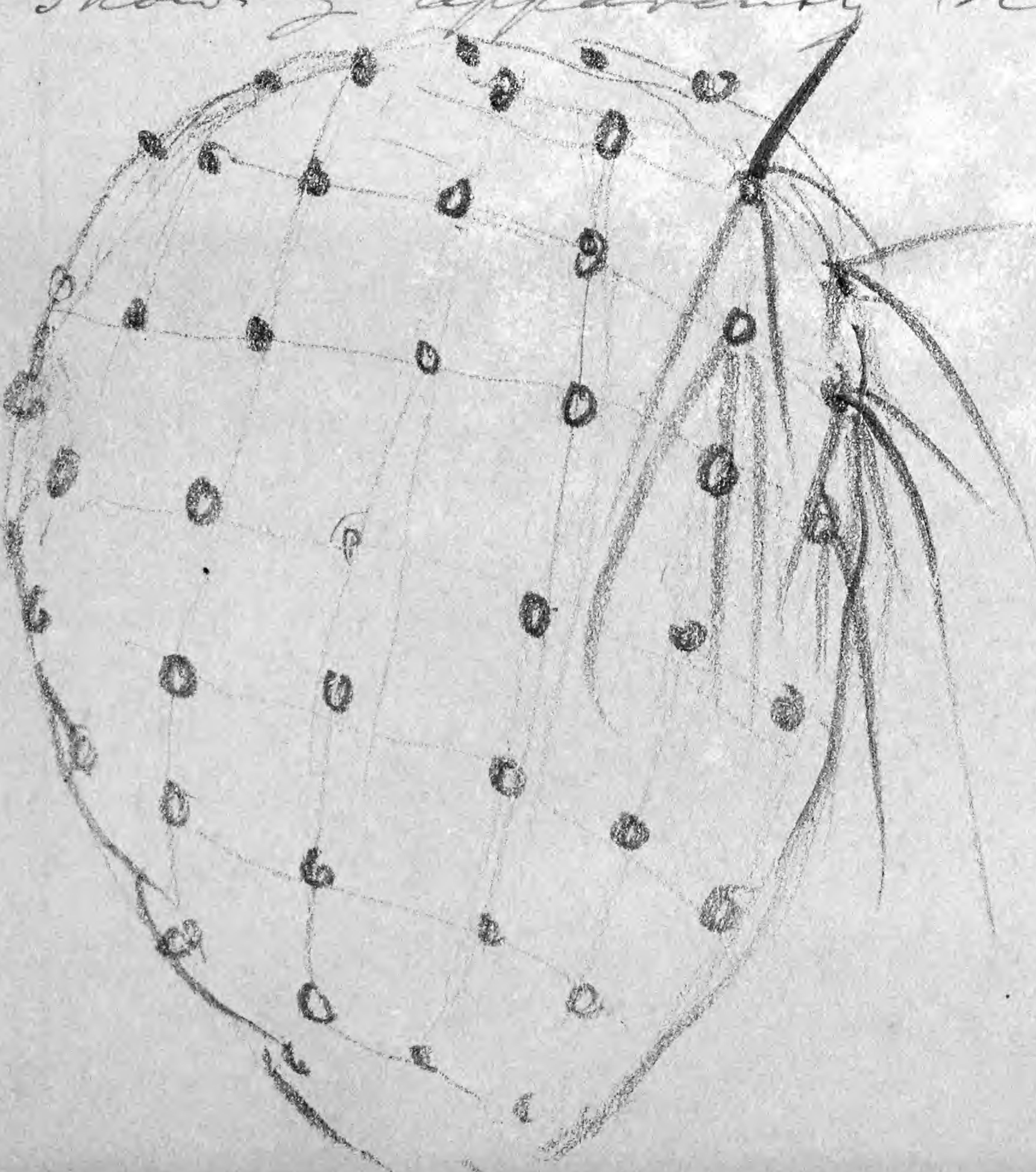


Joint orbicular-ovate  
( $3\frac{1}{2}$  inches by 4 inches)  
thick, tuberculate,  
areole orbicular or oblong,

approximate, all spiny.

Spines slender, compressed,  
angular, pale, ashy whitish, upper one off-stout  
and brown, at least at base. Spines 3-5  
with several smaller ones, mostly deflexed,  
sometimes flexuous, 1-2 inches long. <sup>older pale straw</sup> ~~older pale straw~~  
Younger joints equally thick and tubercular,  
but spines more slender, all white.

flowered (does it belong here?) with  
about 25 spines areoles on way, pointed,  
showing apparently red petals.



No 2. 13 miles south of Fillmore  
seems to be exactly the same  
most all spines deflexed,  
flat at base  
white; only in some upper areoles  
some stout tubercles, brown  
spines pale yellow whitish  
at least elongated  
flowers red, 25 areoles on way



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1840

Henry L. Pease Esq<sup>r</sup> Dr

1842

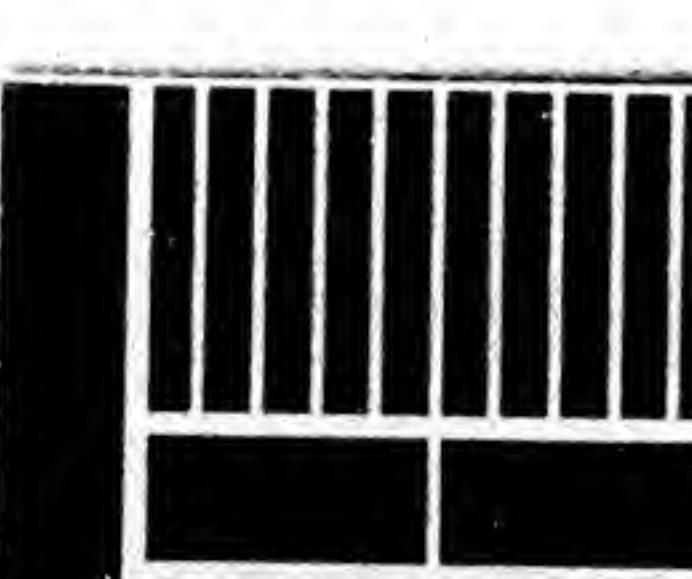
2<sup>o</sup> Admission fee

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Due 31 "

Annual taxes three years

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